

BHGE's Aurora series of moisture analyzers uses tunable diode laser absorption spectroscopy (TDLAS) to rapidly and accurately measure moisture in a variety of background gases. The Aurora TransPort, the latest addition to the series, is a battery operated, moveable analyzer that can be taken into the field to directly measure moisture content of natural gas and other process gases. The unit is assembled into a rugged and transportable case with a telescoping handle and wheels.

BHGE's patented temperature and pressure compensated TDLAS provides repeatable, accurate and drift-free moisture measurement with fast response.

The TransPort is ideal for spot checking the performance of natural gas processing and drying systems, gas storage facilities, compression stations, refinery processes, heat treating furnaces, instrument air and more. It is ideally suited for field verification of permanently installed moisture analyzers and transmitters.

The unit is equipped with a rechargeable battery that provides 8 to 10 hours of operation as well as integrated sample conditioning components. An easy-to-use display/keypad enables direct display of moisture, temperature and pressure. The unit also provides both analog (4-20 mA) and digital interfaces (RS232/485 and Ethernet) for data recording.



SPECIFICATIONS

Range

Range - 0 to 5000 ppm,
For CO₂ applications: 0 to 1000 ppm

Lower Detection Level - 2 ppm
for CO₂ applications: 20 ppm, [-55.3°C]

Dew/Frost Point - -97.1° to 27.3°F (-71.7° to -2.6°C) frost point @STP of 25°C, 14.696 psio

Process Dew/frost Point - Process or equivalent dew point/frost point by condensation with constant user-definable process pressure (4-20 mA) or constant

Absolute Humidity - 0.095 to 237 lbs/MMSCF (1.52 to 3,803 mg/m³)

Accuracy

Parts Per Million by Volume -

±1% of reading or ±2 ppm_v, whichever is greater; for >1000 ppm_v ±5% of reading

For CO₂ applications:

±3% of reading or ±5 ppm_v

For H₂ recycle applications: ±1% of reading or ±2 ppm_v (for up to ±5% H₂ and ±1% C₂H₆ variation from nominal calibration composition)

(Individual instrument calibrated accuracy conditions provided in Certificate of Conformance. Accuracy of other parameters derived from ppm_v)

Repeatability

±0.2 ppm_v or ±0.1%, whichever is greater

For CO₂ applications: ±1.0 ppm_v or ±0.5%, whichever is greater

Calibration Certification

NIST or equivalent NMI traceable certification

Calibration Options

Nitrogen, standard natural gas and 3 customizable calibration curves

Response Time

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Optool system <2 seconds

System Response

The system response is dependent on the length of sample tubing, sample system components, flow rate and pressure, as well as the change in moisture concentration.

Pressure

Operating Sample Cell Pressure

10 to 25 psia (69 to 172 kPa)

Maximum Pressure

30 psi 1206.8 kPa)

Flow Rate

Sample Cell Flow Rate

0.1 to 1.0 SLPM (0.2 to 2.1 SCFH) 0.5 SLPM (1.1 SCFH) nominal

Bypass Fast Loop

5 to 10X of flow rate through sample cell

I/O

Display

Backlit transfective display. Three programmable simultaneous parameters. Alphanumeric status and diagnostic display. LEDs for power, laser temperature stability, keypad lockout

Power

Standard rechargeable lithium-ion battery pack (14.4/6600 mAh): Universol 120 WAC adapter with 24 vdc output

Analog Outputs

Three 0/4-20 mA DC (source) with 500 ohm load. User programmable for any parameter and scalable. Complies with NAMUR protocol for analog signals.

Digital Interfaces

Two programmable digital communications ports: RS232, RS485 with multidrop capability and assignable address. MODBUS RTU protocol. One Ethernet port Modbus TCP/IP protocol

User Interface

Programmable keypad with status/fault indicator LEDs and magnetically actuated reed switches

Laser

Class 1 product. Conforms to IEC 60825-1, Edition 2.0 Safety of Laser Products

Enclosure

Net Weight

48.5 lbs. (22 kg)

Dimensions (H x L x W)

24.6 in X 19.7 in X 11.7 in
(624.84 mm X 500.38 mm X 297.18 mm)

Temperature

Operating

-20 to 50°C (-4 to 149°F) with battery discharging; 0 °C to 45°C (32°C to 113°F) with battery charging

Storage

-20 to 50°C (-4 to 149°F)

Hazardous Area Certification

USA/Canada

General Purpose

EU and Elsewhere

General Purpose